CRU

CONNECTOR
RESOURCES
UNLIMITED
INC

DataPort™ *Installation Manual*

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INTRODUCTION TO THE CRU DATAPORT

Congratulations on your purchase of the CRU **DataPort** Removable Storage Module.

The DataPort allows you to easily remove a 3.5" hard drive from your PC, workstation, disk array, sub-system or minicomputer. The DataPort cartridge provides a simple and inexpensive way to transport data between computers and is also useful for on-line back-up and storage of critical files. Sensitive information can be easily removed and secured. The DataPort is designed for use in hot-swap and hot-removable environments, thus making it ideal for RAID applications.

The DataPort consists of a frame, cartridge and/or top and bottom covers. The frame can be fitted into any standard 5.25" half-height drive bay. The DataPort offers keylock or latch versions, as well as SCSI or IDE interface models.

CRU DataPort is a U.S. patented product. Make sure to check the patent label for authenticity. CRU offers a metal version of the cartridge for those who need FCC approval.

Features and Options

	DataPort I	DataPort IV	DataPort V	DataPort VII
Cartridge Material	Plastic	Plastic	Plastic/Aluminum	Aluminum
Frame Material	Aluminum Alloy	Plastic	Aluminum Alloy	Aluminum Alloy
SCSI ID Selector Switch	N/A	Dial	Dial	Dial with Display
Cooling Fan	N/A	Yes	Yes	Yes
SCSI Fast / Wide option	N/A	N/A	Yes	Yes
HDD Activity LED	Optional	Yes	Yes	Yes
Interface	SCSI and IDE	SCSI and IDE	SCSI and IDE	SCSI

Preparation for Installation

Note: To prevent data loss, read this manual thoroughly before installing or operating the DataPort.

Before touching any electrical equipment, ground yourself by touching the metal part of your computer chassis. This discharges static electricity and prevents any damage to your computer. CRU is not responsible for static discharge damages.

Tools Required:

- Phillips screwdriver.
- Small flat screwdriver.

Other items that may be needed are:

- Hard drive manual to set the SCSI ID for a SCSI drive or to set the master or slave mode for an IDE drive.
- SCSI bus terminator. For external application, a 50-pin SCSI passive or active terminator should be used to terminate the end of the SCSI chain. For internal application, an internal SCSI bus terminator, usually a 220 Ohm resistor pack, is installed on the SCSI drive.

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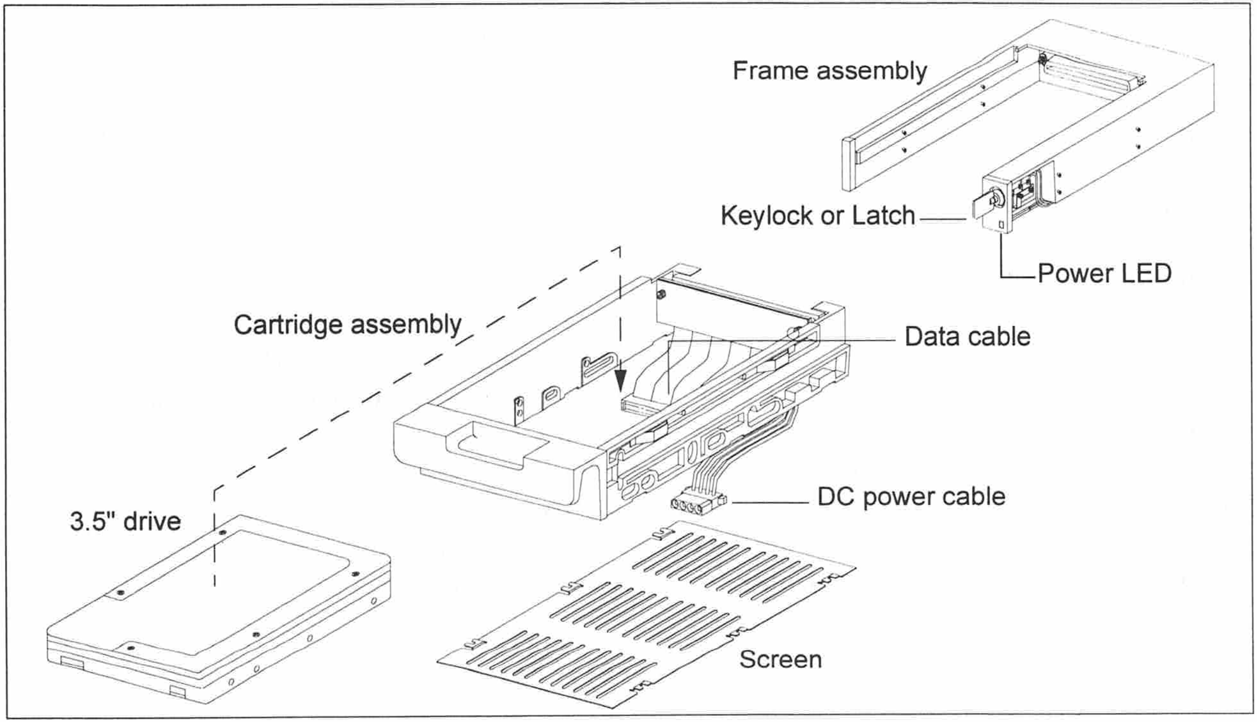


Figure 1 CRU DataPort I.

CRU DATAPORT I

PACKAGE CONTENTS:

The CRU DataPort I kit includes all the necessary hardware to install a 3.5" hard drive in a 5.25" drive bay. Before installing the CRU DataPort I, verify that the following items have been included in the package.

Quantity	**Description**
1	DataPort I frame assembly
1	DataPort I cartridge assembly
1	Metal screen
4	6-32 x 3/8" Phillips pan head screws for hard drive mounting
4	6-32 x 1/4" flat head screws for AT rails or frame mounting
6	2-56 slatted pan head self tapping screws for screen mounting
2	Plastic AT rails
2	Key for keylock version

If any of the above items are missing or you need special parts, contact your dealer or CRU for instructions regarding replacement or service.

You can order additional cartridges for multiple drives.

FRAME INSTALLATION

1. **Turn off the computer and disconnect the power cord from the electrical outlet.**

   Before working on your computer, wait one minute for any residual energy to dissipate.

2. **Remove the cover of the computer.**

   Review your computer user manual for how to remove the cover, then set it aside.

3. **Locate a 5.25" drive bay with external access.**

   Identify the 5.25" half-height bay in which you plan to mount the DataPort I. Study the bay to determine the location of mounting holes or whether mounting rails are necessary. Remove any filler plates that may be present.

4. **Install mounting rails.**

   If the drive bay requires mounting rails, install one on each side of the frame. The mounting rails should be provided with your computer system. The CRU DataPort I includes two standard AT Rails.

5. **Mounting the frame assembly.**

   Insert the frame assembly into the 5.25" bay. Secure the frame assembly with the 6-32 screws provided or with the proper hardware.

6. **Connect the DC power cable and the data cable.**

   Locate an available 4-pin DC power cable from the computer power supply, plug it to the receptacle on the frame. Locate the data cable from the controller, connect it to the I/O connector on the frame. Ensure that pin1 of the I/O connector (printed on the circuit board) matches pin1 on the cable (identified by the red dots).

7. **If you are installing a SCSI model, and are using an external SCSI ID selector switch, refer to "CRU DataPort I SCSI frame" on page 25. Otherwise, go to "Cartridge Installation" below.**

CARTRIDGE INSTALLATION

1. **Connect the DC power cable and data cable to the drive.**

   Plug the 4-pin DC power cable into the power connector on the drive and ensure it is fully seated. Connect the data cable that matches your particular drive (40-pin for an IDE drive or 50-pin for a SCSI drive). Ensure the pin1 on the data cable match the pin 1 on the drive I/O connector header.

2. **If you are installing a SCSI drive with and optional BCD cable for a SCSI ID, Refer to "CRU DataPort I cartridge" on page 22. Otherwise go to step 3.**

3. **Install the drive in the cartridge.**

   Place the drive in the cartridge, use the four 6-32 x 3/8" pan-head screws provided to mount the drive. Position the cables inside the cartridge assembly so that they are completely enclosed within the cartridge.

4. **Install the screen kit.**

   Position the screen on the cartridge, aligning the six slotted tabs along the edge of the screen with the appropriate holes in the cartridge. Secure each tab with one 2-56 self-tapping screw.

5. **Insert the cartridge into the frame assembly.**

   Ensure that the keylock or latch of the DataPort I is in the "open" (vertical) position. Position the cartridge on the guide rails, and slide the cartridge into the frame. Using thumb pressure, fully seat the cartridge in the frame, and then "lock" the unit with the keylock or the latch.

6. **Replace the cover.**

   Carefully recheck the installation procedure above to ensure that everything is in order. Replace the cover on the computer by reversing the sequence of steps that you used to remove it.

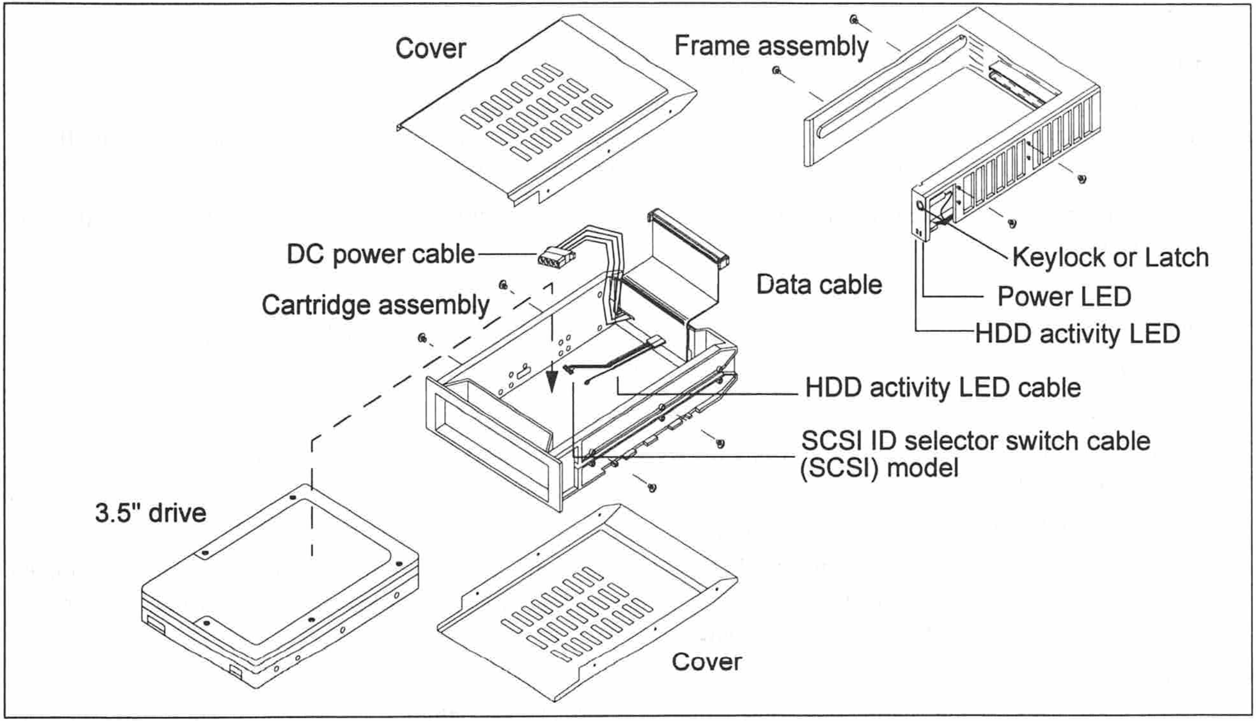


Figure 2 CRU DataPort IV.

CRU DATAPORT IV

PACKAGE CONTENTS:

The CRU DataPort IV kit includes all the necessary hardware to install a 3.5" hard drive in a 5.25" drive bay. Before installing the CRU DataPort IV, verify that the following items have been included in the package.

Quantity	Description
1	DataPort IV frame assembly
1	DataPort IV cartridge assembly
2	Metal covers
4	6-32 x 3/8" flat head screws for hard drive mounting
4	M3 x 3/8"phillips pan-head screws frame mounting
1	SCSI ID selector switch cable
1	HDD activity LED cable
2	Key for keylock version

If any of the above items are missing or you need special parts, contact your dealer or CRU for instructions regarding replacement or service.

You can order additional cartridges for multiple drives.

FRAME INSTALLATION

1. **Turn off the computer and disconnect the power cord from the electrical outlet.**

   Before working on your computer, wait one minute for any residual energy to dissipate.

2. **Remove the cover of the computer.**

   Review your computer user manual for how to remove the cover, then set it aside.

3. **Locate a 5.25" drive bay with external access.**

   Identify the 5.25" half-height bay in which you plan to mount the DataPort IV. Study the bay to determine the location of mounting holes or whether mounting rails are necessary. Remove any filler plates that may be present.

4. **Install mounting rails.**

   If the drive bay requires mounting rails, install one on each side of the frame. The mounting rails should be provided with your computer system.

5. **Mounting the frame assembly.**

   Insert the frame assembly into the 5.25" bay. Secure the frame assembly with the M3 screws provided or with the proper hardware.

6. **Connect the DC power cable and the data cable.**

   Locate an available 4-pin DC power cable from the computer power supply, plug it to the receptacle on the frame. Locate the data cable from the controller, connect it to the I/O connector on the frame. Ensure that pin1 of the I/O connector matches pin1 on the cable (identified by the red dots).

7. **If you are installing a SCSI model, and are using an external SCSI ID selector switch, refer to “CRU DataPort IV and V SCSI frame” on page 25. Otherwise, go to “Cartridge Installation” below.**

CARTRIDGE INSTALLATION

1. **Remove the cartridge top and bottom covers.**
2. **Connect the DC power cable and data cable to the drive.**

   Plug the 4-pin DC power cable into the power connector on the drive and ensure it is fully seated. Connect the data cable that matches your particular drive (40-pin for an IDE drive or 50-pin for a SCSI drive). Ensure the pin1 on the data cable match the pin 1 on the drive I/O connector header.
3. **If you are installing a SCSI model, Refer to "CRU DataPort IV, V, and VII SCSI Cartridge" on page 22. Otherwise go to step 3.**
4. **Install the drive in the cartridge.**

   Place the drive in the cartridge, use the four 6-32 x 3/8" flat head screws provided to mount the drive. Position the cables inside the cartridge assembly so that they are completely enclosed within the cartridge.
5. **Replace the cartridge top and bottom covers**
6. **Insert the cartridge into the frame assembly.**

   Ensure that the keylock or latch of the DataPort IV is in the "open" (vertical) position. Position the cartridge on the guide rails, and slide the cartridge into the frame. Using thumb pressure, fully seat the cartridge in the frame, and then "lock" the unit with the keylock or the latch.
7. **Replace the computer cover.**

   Carefully recheck the installation procedure above to ensure that everything is in order. Replace the cover on the computer by reversing the sequence of steps that you used to remove it.

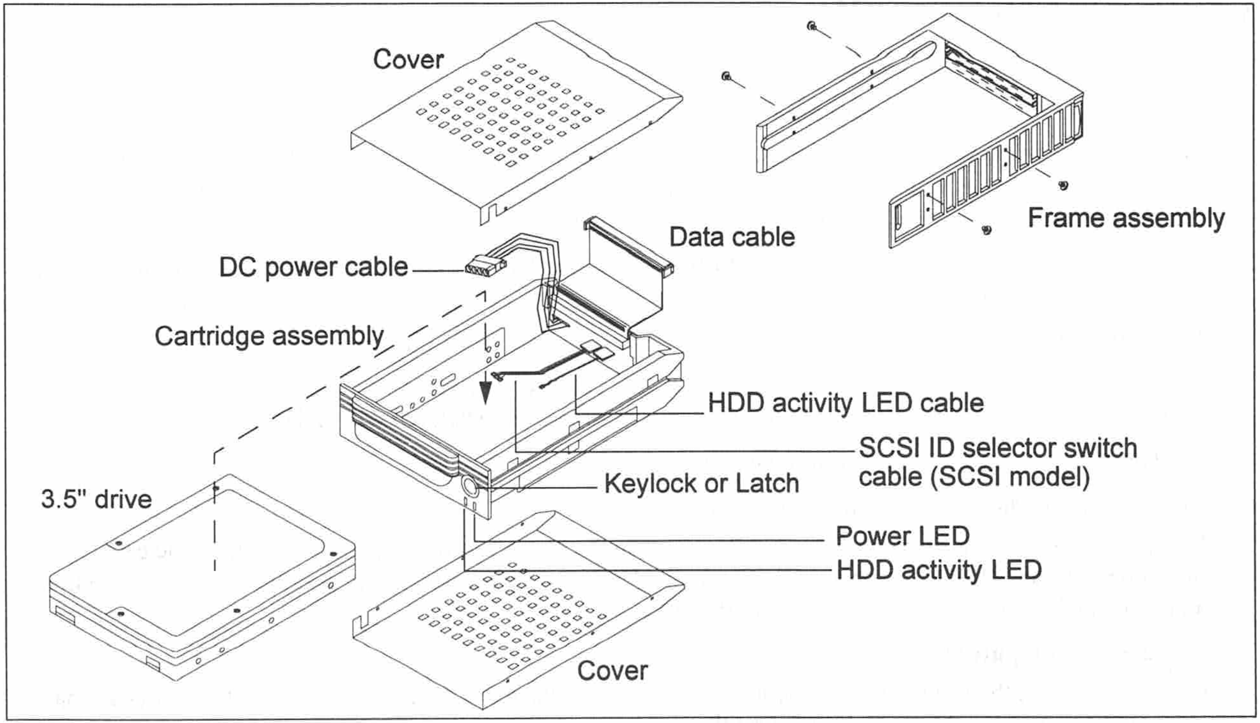


Figure 3 CRU DataPort V.

CRU DATAPORT V

PACKAGE CONTENTS:

The CRU DataPort V kit includes all the necessary hardware to install a 3.5" hard drive in a 5.25" drive bay. Before installing the CRU DataPort V, verify that the following items have been included in the package.

Quantity	**Description**
1	DataPort V frame assembly
1	DataPort V cartridge assembly
2	Metal covers
4	6-32 x 3/8" flat head screws for hard drive mounting
4	M3 x 3/8"phillips pan-head screws frame mounting
1	SCSI ID selector switch cable
1	HDD activity LED cable
2	Key for keylock version

If any of the above items are missing or you need special parts, contact your dealer or CRU for instructions regarding replacement or service.

You can order additional cartridges for multiple drives.

FRAME INSTALLATION

1. **Turn off the computer and disconnect the power cord from the electrical outlet.**

   Before working on your computer, wait one minute for any residual energy to dissipate.

2. **Remove the cover of the computer.**

   Review your computer user manual for how to remove the cover, then set it aside.

3. **Locate a 5.25" drive bay with external access.**

   Identify the 5.25" half-height bay in which you plan to mount the DataPort V. Study the bay to determine the location of mounting holes or whether mounting rails are necessary. Remove any filler plates that may be present.

4. **Install mounting rails.**

   If the drive bay requires mounting rails, install one on each side of the frame. The mounting rails should be provided with your computer system.

5. **Mounting the frame assembly.**

   Insert the frame assembly into the 5.25" bay. Secure the frame assembly with the M3 screws provided or with the proper hardware.

6. **Connect the DC power cable and the data cable.**

   Locate an available 4-pin DC power cable from the computer power supply, plug it to the receptacle on the frame. Locate the data cable from the controller, connect it to the I/O connector on the frame. Ensure that pin1 of the I/O connector matches pin1 on the cable (identified by the red dots).

7. **If you are installing a SCSI model, and are using an external SCSI ID selector switch, refer to "CRU DataPort IV and V SCSI frame" on page 25 or "CRU DataPort V SCSI Fast/Wide frame" on page 27. Otherwise, go to "Cartridge Installation" below.**

CARTRIDGE INSTALLATION

1. **Remove the cartridge top and bottom covers.**
2. **Connect the DC power cable and data cable to the drive.**

   Plug the 4-pin DC power cable into the power connector on the drive and ensure it is fully seated. Connect the data cable that matches your particular drive (40-pin for an IDE drive or 50-pin for a SCSI drive). Ensure the pin1 on the data cable match the pin 1 on the drive I/O connector header.
3. **If you are installing a SCSI model, refer to "CRU DataPort IV, V, and VII SCSI Cartridge" on page 22 or "CRU DataPort V and VII SCSI Fast/Wide Cartridge" on page 23. Otherwise go to step 3.**
4. **Install the drive in the cartridge.**

   Place the drive in the cartridge, use the four 6-32 x 3/8" flat head screws provided to mount the drive. Position the cables inside the cartridge assembly so that they are completely enclosed within the cartridge.
5. **Replace the cartridge top and bottom covers**
6. **Insert the cartridge into the frame assembly.**

   Ensure that the keylock or latch of the DataPort V is in the "open" (vertical) position. Position the cartridge on the guide rails, and slide the cartridge into the frame. Using thumb pressure, fully seat the cartridge in the frame, and then "lock" the unit with the keylock or the latch.
7. **Replace the computer cover.**

   Carefully recheck the installation procedure above to ensure that everything is in order. Replace the cover on the computer by reversing the sequence of steps that you used to remove it.

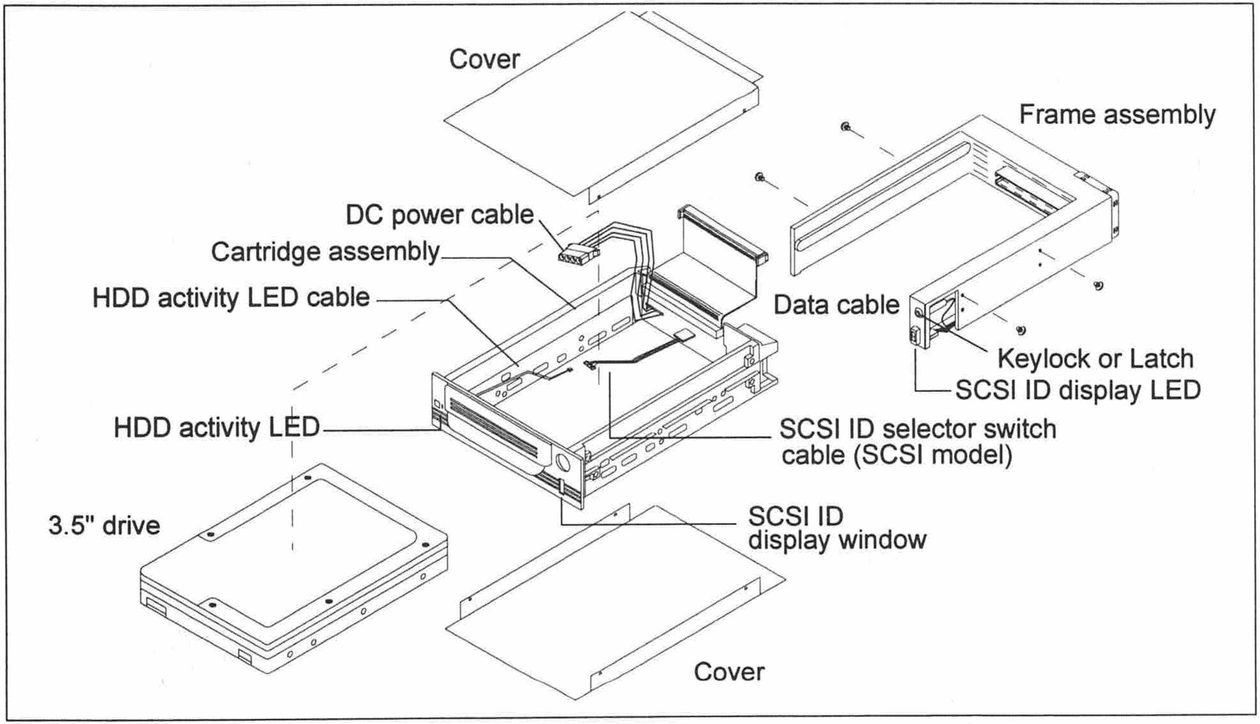


Figure 4 CRU DataPort VII.

CRU DATAPORT VII

PACKAGE CONTENTS:

The CRU DataPort VII kit includes all the necessary hardware to install a 3.5" hard drive in a 5.25" drive bay. Before installing the CRU DataPort VII, verify that the following items have been included in the package.

Quantity	Description
1	DataPort VII frame assembly
1	DataPort VII cartridge assembly
2	Metal covers
4	6-32 x 3/8" flat head screws for hard drive mounting
4	M3 x 3/8"phillips pan-head screws frame mounting
1	SCSI ID selector switch cable
1	HDD activity LED cable
2	Key for keylock version

If any of the above items are missing or you need special parts, contact your dealer or CRU for instructions regarding replacement or service.

You can order additional cartridges for multiple drives.

FRAME INSTALLATION

1. **Turn off the computer and disconnect the power cord from the electrical outlet.**

   Before working on your computer, wait one minute for any residual energy to dissipate.

2. **Remove the cover of the computer.**

   Review your computer user manual for how to remove the cover, then set it aside.

3. **Locate a 5.25" drive bay with external access.**

   Identify the 5.25" half-height bay in which you plan to mount the DataPort VII. Study the bay to determine the location of mounting holes or whether mounting rails are necessary. Remove any filler plates that may be present.

4. **Install mounting rails.**

   If the drive bay requires mounting rails, install one on each side of the frame. The mounting rails should be provided with your computer system.

5. **Mounting the frame assembly.**

   Insert the frame assembly into the 5.25" bay. Secure the frame assembly with the M3 screws provided or with the proper hardware.

6. **Connect the DC power cable and the data cable.**

   Locate an available 4-pin DC power cable from the computer power supply, plug it to the receptacle on the frame. Locate the data cable from the controller, connect it to the I/O connector on the frame. Ensure that pin1 of the I/O connector matches pin1 on the cable (identified by the red dots).

7. **If you are installing a SCSI model, and are using an external SCSI ID selector switch, refer to "CRU DataPort VII SCSI frame" on page 27. Otherwise, go to "Cartridge Installation" below.**

CARTRIDGE INSTALLATION

1. **Remove the cartridge top and bottom covers.**
2. **Connect the DC power cable and data cable to the drive.**

   Plug the 4-pin DC power cable into the power connector on the drive and ensure it is fully seated. Connect the data cable that matches your particular drive (40-pin for an IDE drive or 50-pin for a SCSI drive). Ensure the pin1 on the data cable match the pin 1 on the drive I/O connector header.
3. **If you are installing a SCSI model, refer to "CRU DataPort IV, V, and VII SCSI Cartridge" on page 22 or "CRU DataPort V and VII SCSI Fast/Wide Cartridge" on page 23. Otherwise go to step 3.**
4. **Install the drive in the cartridge.**

   Place the drive in the cartridge, use the four 6-32 x 3/8" flat head screws provided to mount the drive. Position the cables inside the cartridge assembly so that they are completely enclosed within the cartridge.
5. **Replace the cartridge top and bottom covers**
6. **Insert the cartridge into the frame assembly.**

   Ensure that the keylock or latch of the DataPort VII is in the "open" (vertical) position. Position the cartridge on the guide rails, and slide the cartridge into the frame. Using thumb pressure, fully seat the cartridge in the frame, and then "lock" the unit with the keylock or the latch.
7. **Replace the computer cover.**

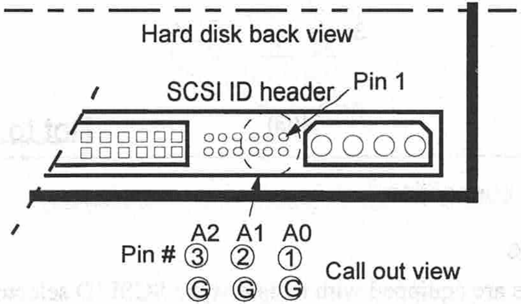
   Carefully recheck the installation procedure above to ensure that everything is in order. Replace the cover on the computer by reversing the sequence of steps that you used to remove it.

CONNECTING THE SCSI ID SELECTOR SWITCH

CARTRIDGE SETUP

The CRU DataPort IV, V and VII cartridges are equipped with a dialer type SCSI ID selector switch, which allow you to externally name the SCSI drive identification number. Each selector switch is connected to the SCSI drive by a BCD cable. Refer to the following to connect the BCD cable to the SCSI drive.

Refer to the document for the drive to locate the SCSI ID header or jumper block. It is usually a six-pin (7-segment, Narrow SCSI as shown in Figure 5) or eight-pin (15-segment, Wide SCSI) dual-row pin header located either on the back of the device or the component side of the device.



SCSI ID	A2	A1	A0
0	Open	Open	Open
1	Open	Open	Close
2	Open	Close	Open
3	Open	Close	Close
4	Close	Open	Open
5	Close	Open	Close
6	Close	Close	Open
7	Close	Close	Close

* Close = jumper on, Open= jumper off

Figure 5 SCSI ID header layout.

CRU DataPort I cartridge

The CRU DataPort I SCSI model cartridge has a 5-pin connector, as shown in Figure 6, for connecting the BCD cable from cartridge to drive. The optional cable set (CRU part number 7350-039-01) contains two cables. This procedure uses the cable with three minitek connectors on one end and a 5-pin in-line connector on the other end. Refer to Figure 6 for details.

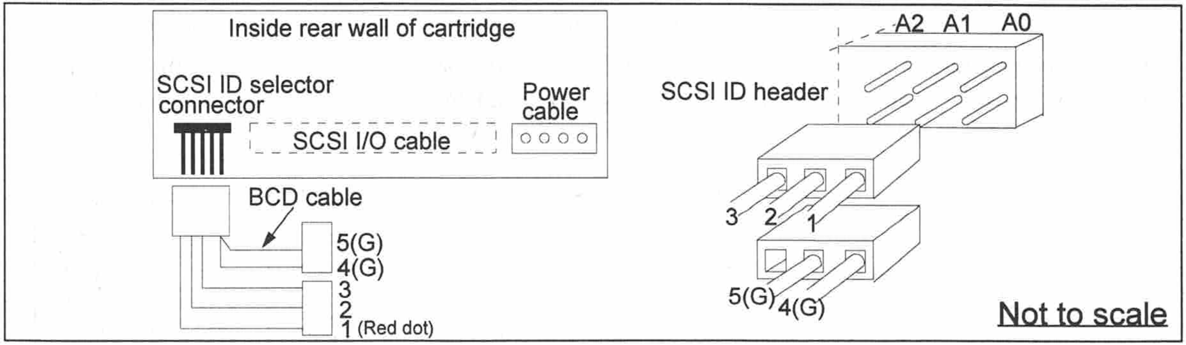


Figure 6 CRU DataPort I SCSI cartridge cable connection.

CRU DataPort IV, V, and VII SCSI Cartridge

CRU DataPort IV, V, and VII narrow SCSI cartridges are equipped with a dialer-type SCSI ID selector switch, which allows you to externally name the SCSI drive identification number. You can set the hard drive SCSI ID number by turning the rotary switch from 0 to 6 (positions 7, 8, and 9 are not used). When using an external SCSI ID selector, the internal SCSI ID selector switch is set to 0. Refer to Figure 7 for details.

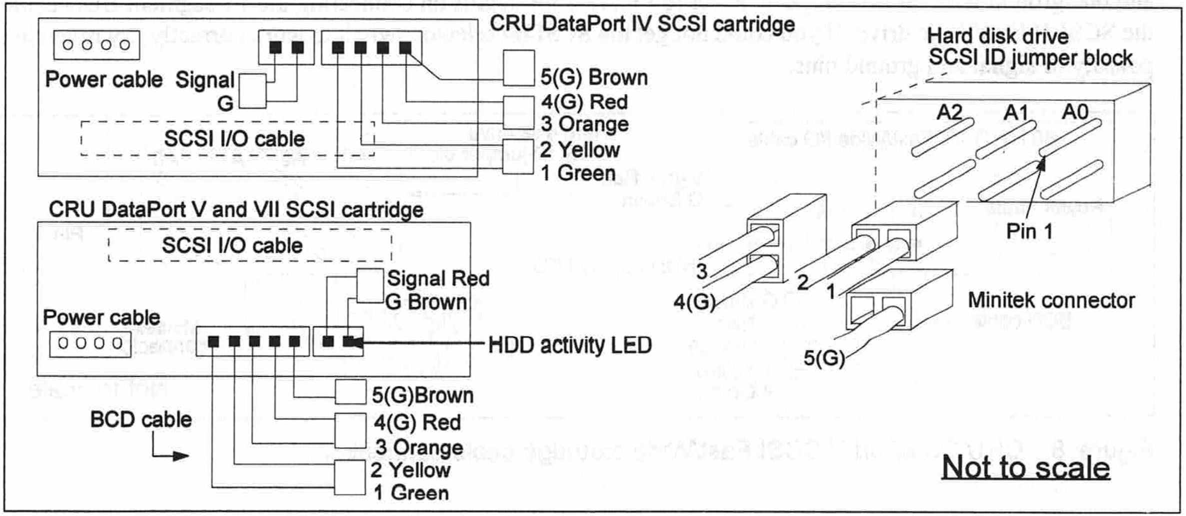


Figure 7 CRU DataPort IV, V and VII SCSI cartridge cable connection.

CRU DataPort V and VII SCSI Fast/Wide Cartridge

DataPort V and VII SCSI-II Fast/Wide cartridge has a 15-segment SCSI ID selector switch for SCSI-II Fast/Wide drives. The rotary switch is marked from 0 to 9 followed by "A" through "F," where "A" represents SCSI ID number 10 and "B" represents SCSI ID number 11 and so on. There are 4 pair of jumpers, "A0" through "A3", on the SCSI-II Fast/Wide drives SCSI ID header, thus the 15-segment BCD cable has four signal wires and one ground wire for this purpose. Refer to Figure 8 for details on connecting the 15-segment BCD cable to the SCSI-II Fast/Wide drive. If you could not get the SCSI ID selector switch to work correctly, try reversing the polarity of signal and ground pins.

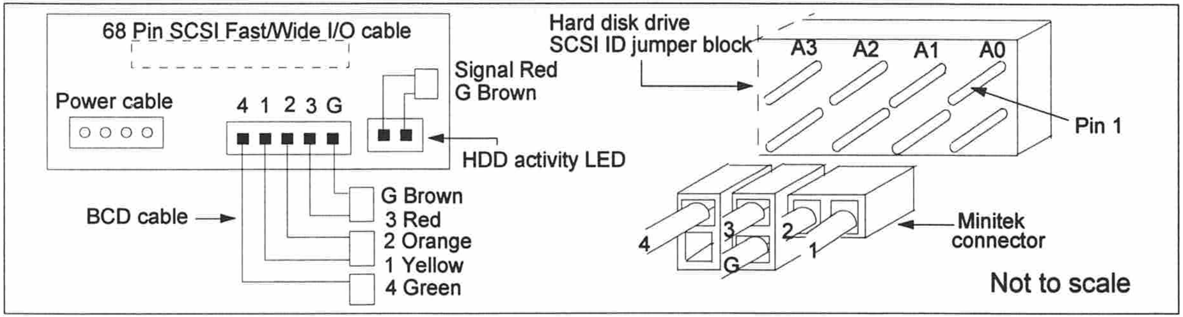


Figure 8 CRU DataPort V SCSI Fast/Wide cartridge cable connection.

FRAME SETUP

CRU DataPort I SCSI frame

The CRU DataPort I SCSI frame assembly has a SCSI ID jumper block located on the bottom-right corner, beside the SCSI header. Refer to Figure 8 "Back view of CRU DataPort I frame." for more details.

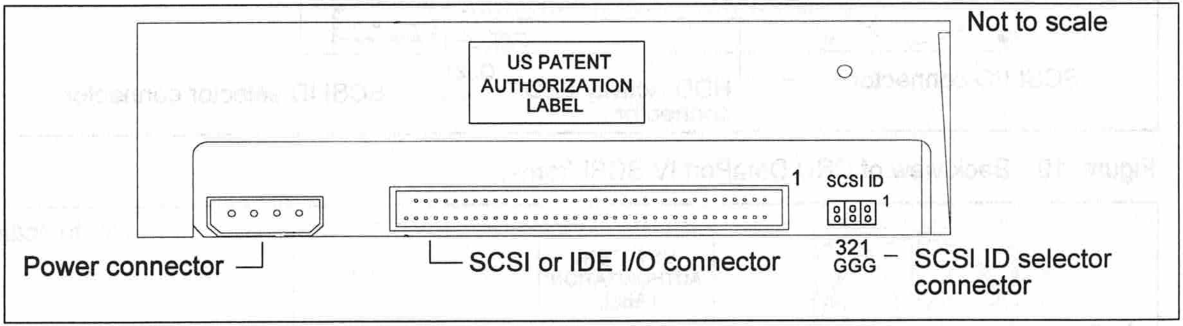

Not to scale
US PATENT AUTHORIZATION LABEL
1
SCSI ID
1
321
GGG
Power connector
SCSI or IDE I/O connector
SCSI ID selector connector

Figure 9 Back view of CRU DataPort I frame.

CRU DataPort IV and V SCSI frame

The CRU DataPort IV and V SCSI frame has a 4-pin header on the back of the frame next to the power connector. The 4-pin header is for connecting to an external SCSI ID selector. The BCD cable for this purpose is CRU part number 7350-031-08. Refer to Figure 10 "Back view of CRU DataPort IV SCSI frame." and Figure 11 "Back view of CRU DataPort V SCSI frame." for detailed installation information.

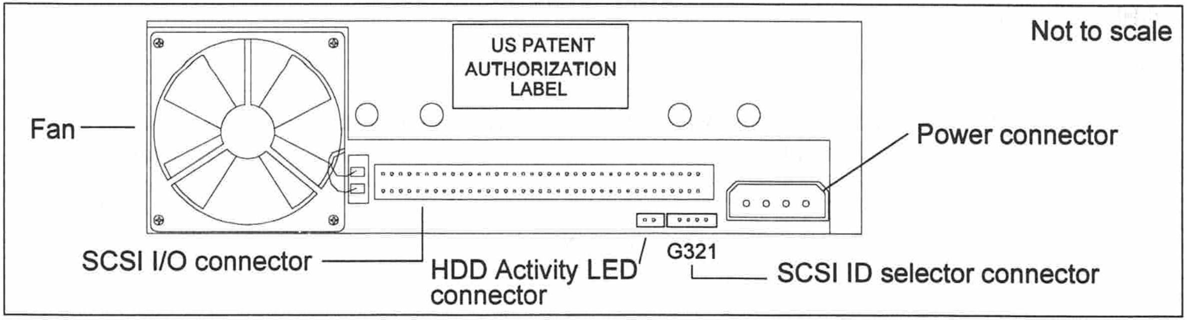

Not to scale
US PATENT AUTHORIZATION LABEL
Fan
Power connector
SCSI I/O connector
HDD Activity LED connector
G321
SCSI ID selector connector

Figure 10 Back view of CRU DataPort IV SCSI frame.

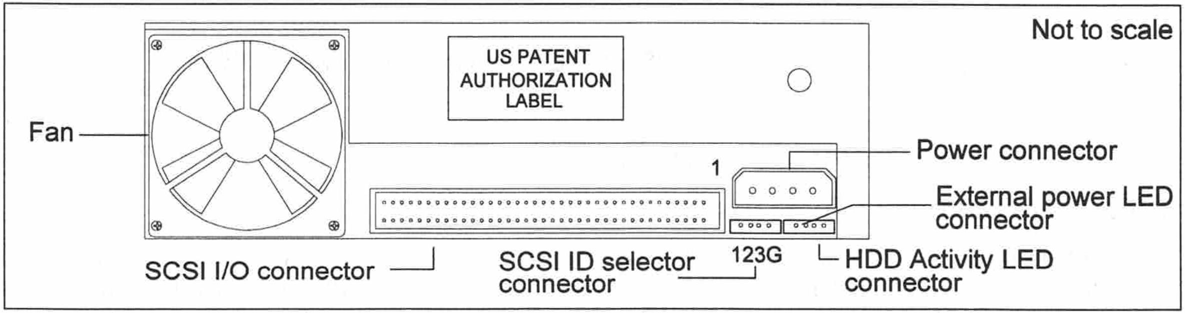

Not to scale
US PATENT AUTHORIZATION LABEL
Fan
Power connector
1
External power LED connector
SCSI I/O connector
SCSI ID selector connector
123G
HDD Activity LED connector

Figure 11 Back view of CRU DataPort V SCSI frame.

CRU DataPort V SCSI Fast/Wide frame

CRU DataPort V SCSI Fast/Wide frame has a 5-pin header for connecting the BCD cable (CRU part number 7350-031-09) to the external SCSI ID selector switch. Please refer to the Figure 12 for detail installation.

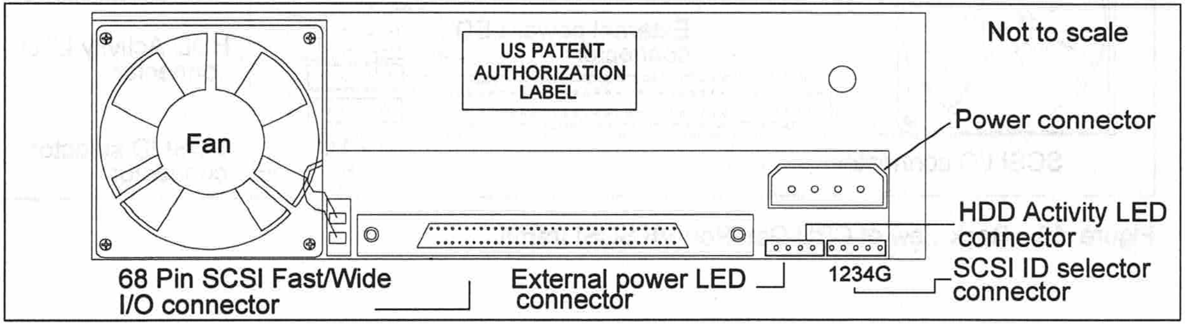

Not to scale
US PATENT AUTHORIZATION LABEL
Fan
Power connector
HDD Activity LED connector
SCSI ID selector connector
1234G
68 Pin SCSI Fast/Wide I/O connector
External power LED connector

Figure 12 Back view of CRU DataPort V SCSI Fast/Wide frame.

CRU DataPort VII SCSI frame

The CRU DataPort VII SCSI frame has a 4-pin header on the back of the frame bellow the power connector. The 4-pin header is for connecting to an external SCSI ID selector. The BCD cable for this purpose is CRU part number 7350-031-08. Refer to Figure 13 “Back view of CRU DataPort VII SCSI frame.” for detailed installation information.

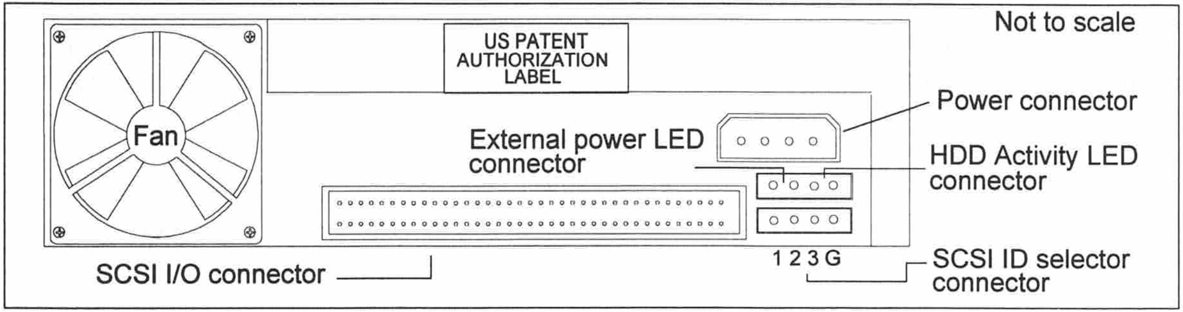

Not to scale
US PATENT AUTHORIZATION LABEL
Fan
Power connector
External power LED connector
HDD Activity LED connector
SCSI I/O connector
1 2 3 G
SCSI ID selector connector

Figure 13 Back view of CRU DataPort VII SCSI frame.

OPERATION

TURN ON THE POWER

Turn the keylock or latch on the CRU DataPort to the ON position before turning on the computer. When the computer is turned on, the "Power On" LED (green light emitting diode below the key on the frame assembly) is illuminated, and the system should operate normally.

FAN FAIL ALARM

The fan failure alarm function is a standard feature on DataPort VII and is optional on Dataport V. When the cooling fan fails, an alarm buzzer beeps and the red dot on the lower right corner of the DataPort VII LED display windows will become flashing indicating the fan failure.

Important: read the following before removing the cartridge.

REMOVE THE CARTRIDGE

If you need to remove the cartridge while the computer is running, observe the following precautions:

- Wait until the drive activity light has stopped, which indicates that no read/write activity is occurring. If your system uses a disk caching program, ensure that all the data has been written to the hard drive. Turn off the drive by turning the key to the OFF (vertical) position. The power LED goes off, indicating that the power has been cut. Wait ten seconds for the drive to park the drive heads, and then remove the cartridge with the drive in it.

- CRU is not liable for loss of data. It is the user's responsibility to follow these important procedures to safeguard data.

TROUBLE SHOOTING

If you experience problems, first check all of the cable connections and the jumper configurations. For the SCSI model, check the termination and the SCSI ID number. For the IDE model, check the Master/Slave mode setting on the drive.

CRU recommends that you use an active SCSI bus terminator for external application.

TECHNICAL SUPPORT

Contact your dealer for technical support first, if your still need assistance, then contact CRU technical support department at phone number (408) 957-5757 during 8:00 AM to 5:00 PM, PST Monday through Friday or by FAX (408)9957-0862. When you call, have this information ready:

- The part number of your CRU DataPort(s)
- The manufacture name and model number of the hard disk drive you are using
- Any error messages that appeared on your screen
- The name of the dealer from which you purchased your CRU product(s)

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